CLAIMS

1. An imaging apparatus having an imaging section; an image inputting section composed of a frontend; and a signal processing section which processes a plurality of image signals supplied from the image inputting section and generates three primary color signals,

wherein the imaging section has a three primary color system color separation filter, a complementary color system color separation filter, and an imaging device to which color lights separated by the color separation filters are input,

wherein the signal processing section performs a matrix calculating process for the plurality of signals obtained by the three primary color system color separation filter and the complementary color system color separation filter and generates three primary color signals in a first region of which input image data are in a low/middle luminance level, and

wherein the signal processing section performs a matrix calculating process for three primary color signals obtained by the three primary color system color separation filter and generates three primary color signals in a second region of which the input image data are in a high luminance level.

2. The imaging apparatus as set forth in claim 1, wherein the three primary color system color

separation filter is composed of an R (red) filter, a G (green) filter, and a B (blue) filter and the complementary color system color separation filter is composed of a Y (yellow) filter and a C (cyan) filter.

3. The imaging apparatus as set forth in claim 1, wherein the signal processing section has a first matrix calculating section which generates three primary color signals with first matrix coefficients emphasizing noise characteristic in the first region, a second matrix calculating section which generates three primary color signals with second matrix coefficients of which color reproducibility and noise characteristic are well balanced in the second region, and a mixing section which multiplies output signals of the first and second matrix calculating sections by gain coefficients and adds the products.

4. The imaging apparatus as set forth in claim 1, wherein the boundary of the first and second regions is selected in a luminance level of which the imaging device is saturated through the complementary color system color separation filter.

5. An imaging device composed of a total of five color filters of three primary color filters of R (red), G (green), and B (blue) of a primary color system and two color filters of Y (yellow) and C (cyan) of a complementary system,

wherein G filters having a luminance

characteristic similar to human eyes are arrayed in a checker shape so that space information of green is obtained four times larger than that of each of the other colors.

6. The imaging device as set forth in claim 5, wherein the minimum unit of the array is 4 x 4, each row and each line containing two G filters, and wherein the other two filters of each row and each line are a filter having high sensitivity and a filter having low sensitivity so that the luminance difference is small in the horizontal direction and the vertical direction.

7. The imaging device as set forth in claim 5, wherein the size of the minimum unit of the array is 4 x 4 and each row and each line containing two G filters,

wherein rows containing two filters having high sensitivity and rows containing two filters having low sensitivity are alternately arrayed, and

wherein lines containing two filters having high sensitivity and lines containing two filters having low sensitivity are alternately arrayed.